

WE CLAIM:

1. A detachable half shaft assembly of a vehicle wheel end having a shaft bell and a disc rotor, the detachable half shaft comprising:

a preloaded bearing assembly having an inner surface formed through inboard and outboard ends thereof; and

a detachable body having an inboard interface at an inboard end and an outboard interface at an outboard end, the inboard interface being configured for connecting to the shaft bell and the outboard interface being configured for connecting to the disc rotor, the detachable body having a bearing receiving portion defined by a stepped boss and a roll formed face, the bearing receiving portion radially receiving the inner surface of the preloaded bearing assembly, the stepped boss and the roll formed face engaging the bearing assembly at the inboard and outboard ends to maintain the preload thereon when the detachable half shaft assembly is detached from the shaft bell or the disc rotor.

2. The detachable half shaft assembly of claim 1, wherein the preloaded bearing assembly comprises:

an outer race including an inner wall formed therethrough having an inboard outer raceway and an outboard outer raceway formed thereon;

an outboard inner race disposed adjacent the outboard end of the detachable body, the outboard inner race having a first raceway formed thereon and configured to cooperate with the outboard outer raceway of the outer race to house bearings, the outboard inner race having an outboard inner surface; and

an inboard inner race disposed adjacent the inboard end of the detachable body, the inboard inner race having a second raceway formed thereon and configured to cooperate with the inboard outer raceway of the outer race to house bearings, the inboard inner race having an inboard inner surface.

3. The detachable half shaft assembly of claim 1, wherein the stepped boss of the detachable body is formed at one of the inboard end and the outboard end.

4. The detachable half shaft assembly of claim 3, wherein the roll formed face is formed adjacent the other of the inboard end and the outboard end.

5. The detachable half shaft assembly of claim 1, wherein the inboard interface of the detachable body is a polygon interface.

6. The detachable half shaft assembly of claim 5, wherein the polygon interface is an 18-sided polygon surface.

7. The detachable half shaft assembly of claim 1, wherein the outboard interface is a polygon interface.

8. The detachable half shaft assembly of claim 7, wherein the polygon interface is a 6- to 8-sided polygon surface.

9. A detachable half shaft assembly of a vehicle wheel end having a shaft bell and a disc rotor, the detachable half shaft comprising:

a detachable body having an inboard interface at an inboard end and an outboard interface at an outboard end, the inboard interface for connecting to the shaft bell and the outboard for connecting to the disc rotor, the detachable body having a bearing receiving portion defined by a stepped boss and a roll formed face; and

a preloaded bearing assembly comprising:

an outer race including an inner wall formed therethrough having an inboard outer raceway and an outboard outer raceway formed thereon;

an outboard inner race disposed adjacent the outboard end of the detachable body, the outboard inner race having a first raceway formed thereon and configured to cooperate with the outboard outer raceway of the outer race to house bearings, the outboard inner race having an outboard inner surface; and

an inboard inner race disposed adjacent the inboard end of the detachable body, the inboard inner race having a second raceway formed thereon and configured to cooperate with the inboard outer raceway of the outer race to house bearings, the inboard inner race having an inboard inner surface,

the bearing receiving portion radially receiving inboard and outboard inner surfaces, the stepped boss and the roll formed face engaging the bearing assembly to maintain the preload thereon when the detachable half shaft assembly is detached from the shaft bell or the disc rotor.

10. The detachable half shaft assembly of claim 1, wherein the stepped boss of the detachable body is formed at one of the inboard end and the outboard end.

11. The detachable half shaft assembly of claim 10, wherein the roll formed face is formed adjacent the other of the inboard end and the outboard end.

12. The detachable half shaft assembly of claim 9, wherein the inboard interface of the detachable body is a polygon interface.

13. The detachable half shaft assembly of claim 12, wherein the polygon interface is an 18-sided polygon surface.

14. The detachable half shaft assembly of claim 9, wherein the outboard interface is a polygon interface.

15. The detachable half shaft assembly of claim 14, wherein the polygon interface is an 6- to 8-sided polygon surface.